UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,180	11/26/2003	Jong Chul Bang	K-0585	6620

34610 7590 05/23/2008

KED & ASSOCIATES, LLP
P.O. Box 221200
Chantilly, VA 20153-1200

EXAMINER	
PERRIN, JOSEPH L	
ART UNIT	PAPER NUMBER
1792	
MAIL DATE	DELIVERY MODE
05/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,180	BANG, JONG CHUL	
	Examiner	Art Unit	
	Joseph L. Perrin, Ph.D.	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-24,26,28,29,31-37,40 and 42-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-24, 26, 28, 29, 31-37, 40 and 42-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's amendment filed 16 April 2008 render moot the rejection under §112, second paragraph.

2. Applicant's arguments filed 16 April 2008 have been fully considered but they are not persuasive. Initially, the Examiner notes that applicant's amendment appears to simply remove the language which resulted in the §112 rejection with no additional structural limitations added to the claimed invention to address how the resistance coil is "configured". In addition, it appears applicant's primary argument is for the resistance coils and how a coil melts when used and a certain level of electric energy is applied. The Examiner notes that such structure is notoriously well known and is the most basic of circuit breaker design, the common fuse. Notwithstanding this, it appears applicant has more narrowly construed the claim scope than the recited claims are reasonably permitted as applicant's claims are directed to the intended use of applying enough electric energy to melt a resistance coil, which are immense in breadth and read not just on a fuse-type circuit breaker but any resistance coil with a melting point. Manifestly, the prior art coils have a melting point (as all coils have a melting point) and, thus, read on the invention as claimed. Applicant is reminded that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch &*

Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original) Accordingly, as no structural distinction is readily apparent the apparatus as claimed reads on the apparatus of ABE for reasons of record.

3. Similarly, regarding the §103 rejection over ERDMAN, DARBY and ABE, the intended use of the coil melting fails to patentably distinguish from the cited art coil as any coil has a melting point (see above). Moreover, on pages 14 & 15 of the response, applicant provides piecemeal analysis of each references indicating that none of individual references teach all of the claimed limitations. However, it is noted that the rejection is under §103 and not an anticipation rejection over each reference individually. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

4. Regarding the §103 rejection over ERDMAN, DARBY, ABE and FEHR/BILLERBECK/SHINOHARA in the bottom paragraph of page 15 in the instant response, applicant argues that FEHR/BILLERBECK/SHINOHARA "fail to overcome the deficiencies of Erdman and Abe". This is not persuasive because ERDMAN and ABE, alone or in combination, are not deficient for reasons of record and those indicated above.

5. As previously stated, applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably

distinguishes them from the references. While applicant appears to focus on the ability of a coil to melt to prevent damage from a excess "electric energy", this does not appear to be the point of novelty in the instant application as such structure is simply a common knowledge fuse as a circuit breaker. Notwithstanding this, the scope of the claims is much broader than a fuse-type circuit breaker for reasons of record. If such structure is applicant's point of novelty, applicant is urged to thoroughly define the structure accordingly and provide evidence or showing of unexpected results or unpredictability as no patentable distinction is readily apparent and the use of a common fuse in an electrical device for its intended purpose would appear to be an obvious modification.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 37, 40 & 43-46 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-125600 to ABE. Re claims 37, 40 & 43, ABE discloses an assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second terminals in the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances and the coil ends connected to either separate terminals or a common terminal which are coupled to the motor (it is common knowledge that conventional motors such as that used in ABE comprise windings) (see abstract and Figures 1, 2, 3 & 5). Re claims 44-45, these claims are directed to the coils having the

capability to convert voltage into thermal energy so as to decrease voltage which is simply a property of a conventional resistance coil such as that recited in ABE. Re claim 46, given the immense scope of the claim such language reads on any coil, and the position is taken that any coil has a predetermined melting point and predetermined thickness to melt and is capable of melting with a certain voltage. Simply put, any conventional coil melts at some voltage.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 21-24, 26 & 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of U.S. Patent No. 6,748,618 to DARBY *et al.* ("DARBY") and ABE. In Figure 6, ERDMAN teaches a washing machine having a cabinet, drum, motor, and brake resistance assembly including, *inter alia*, an energy dissipation circuit (228) connected to an external circuit including winding coils of the motor and to terminals (see also Figure 25). ERDMAN also teaches the known concept of dissipating energy from inertia driven rotors when the motor is switched off using, *inter alia*, plural resistors (see col. 42, line 60 - col. 43, line 15).

While ERDMAN discloses a brake resistance assembly for controlling braking of a rotary motor as a counter electromotive brake, ERDMAN does not expressly disclose precisely how the energy is converted and dissipated or such assembly in a case with

first and second coils of differing resistance and connected to first and second terminals. Re claims 21 & 29, DARBY teaches that it is known that using resistors to dissipate energy from a winding motor is performed by converting spinning energy into electrical energy, and then to heat energy which is dissipated by the resistor. ABE discloses a braking assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second terminals in the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances and the coil ends connected to either separate terminals or a common terminal (see abstract and Figures 1, 2, 3 & 5). Re claims 22-24, these claims are directed to the coils having the capability to convert voltage into thermal energy so as to decrease voltage which is simply a property of a conventional resistance coil such as that recited in ABE. Re claim 26, given the immense scope of the claim such language reads on any coil, and the position is taken that any coil has a predetermined melting point and predetermined thickness to melt and is capable of melting with a certain voltage. Simply put, any conventional coil melts at some voltage.

ABE teaches that it is known to provide a braking assembly for a rotary motor in an assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second connect terminals fixed to the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances in order to more effectively control a motor braking action (see abstract and Figures 1,2,3 & 5). Re claim 26, such language is directed to intended use and not afforded patentable weight, and the position is taken that any coil has a predetermined

melting point and predetermined thickness to melt and is capable of melting with a certain voltage. Simply put, any coil melts at some voltage.

Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to substitute the washing machine braking assembly of ERDMAN with the braking assembly of ABE in order to provide the predictable results of a rotary motor with an effective braking function in a rotary motor. Moreover, there would be a reasonable expectation of success in substituting one braking assembly for another in order to arrive at applicant's claimed invention since such substitution of known equivalents would have yielded the same predictable results.

10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of DARBY and ABE, and further in view of FEHR. Recitation of ERDMAN, DARBY & ABE are repeated here from above. While ABE expressly teaches coils having different resistivity and expressly teaches the coils having different diameters, ABE does not expressly disclose the coil material. FEHR teaches that it is known to use aluminum or copper in coil material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum or copper in the coils to achieve different resistances due to their well known and naturally occurring different resistances since applicant has not disclosed that using copper or aluminum solves any stated problem or is for any particular purpose other than achieving different resistance from their inherent and natural properties and it appears

that the invention would perform equally well with other means for achieving different resistance between two coils and the selection of any of these known equivalents (i.e. different coil diameter or different coil material) to provide different resistance between coils would be within the level of ordinary skill in the art.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of DARBY and ABE, and further in view of BILLERBECK. Recitation of ERDMAN, DARBY and ABE are repeated here from above. While ABE discloses the claimed braking assembly as claimed including a casing, ABE does not disclose the casing having contours for dissipating heat. BILLERBECK teaches that it is known to provide a coil casing with contoured U-shaped channels for dissipating coil heat (see entire document, for instance, the abstract, Figures and relative associated text).

All of the component parts are known in ERDMAN, DARBY, ABE and BILLERBECK. The only difference is the combination of "old elements" into a single device (particularly, the casing of ABE and BILLERBECK).

Thus, it would have been obvious to one having ordinary skill in the art to provide the coil case of ABE with heat dissipating channels of the coil case of BILLERBECK, since the operation of the heat dissipating channels is in no way dependent on the operation of the braking assembly, and heat dissipating channels could be used in combination with an electromagnetic coil casing to achieve the predictable results of dissipating heat from coils inside a casing.

12. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of DARBY and ABE, and further in view of SHINOHARA. Recitation of ERDMAN, DARBY & ABE is repeated here from above. While the combination at least teaches or suggest coils in an electromagnetic motor braking assembly, none of the references appear to disclose using a molding material having good heat conductivity. SHINOHARA teaches that it is known that molded resins have excellent heat resistance and electrical insulation properties (see col. 19, lines 13-21) and to provide molded resins in molded articles such as "electromagnetic coil bobbin cases" (see col. 21, lines 19-37).

Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to supply the brake assembly of ERDMAN, DARBY & ABE with molded insulation resins as described in SHINOHARA to provide heat resistivity/insulation in order to avoid heat damage, i.e. fires. Regarding the configuration of the partitions, coils and terminals, it would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the internal components to achieve the same predictable result (patentability of the configuration is not clearly pointed out, see above regarding 37 CFR 1.111(b)), since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

13. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of FEHR. Recitation of ABE is repeated here from above. While ABE expressly

teaches coils having different resistivity and expressly teaches the coils having different diameters, ABE does not expressly disclose the coil material. FEHR teaches that it is known to use aluminum or copper in coil material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum or copper in the coils to achieve different resistances due to their well known and naturally occurring different resistances since applicant has not disclosed that using copper or aluminum solves any stated problem or is for any particular purpose other than achieving different resistance from their inherent and natural properties and it appears that the invention would perform equally well with other means for achieving different resistance between two coils and the selection of any of these known equivalents (i.e. different coil diameter or different coil material) to provide different resistance between coils would be within the level and knowledge of ordinary skill in the art.

14. Claims 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of SHINOHARA. Recitation of ABE is repeated here from above. While ABE discloses the claimed electromagnetic motor braking assembly as claimed, ABE does not appear to disclose using a molding material having good heat conductivity. SHINOHARA teaches that it is known that molded resins have excellent heat resistance and electrical insulation properties (see col. 19, lines 13-21) and to provide molded resins in molded articles such as “electromagnetic coil bobbin cases” (see col. 21, lines 19-37). Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to supply the

brake assembly of ABE with molded insulation resins as described in SHINOHARA to provide heat resistivity/insulation in order to avoid heat damage, i.e. fires. Regarding the configuration of the partitions, coils and terminals, it would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the internal components to achieve the same predictable result (patentability of the configuration is not clearly pointed out, see above regarding 37 CFR 1.111(b)), since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. Re claim 51, the terminals are clearly mounted on a "partition" structure. Even if, *arguendo*, one were construe the electromagnet structure as not readable on a "case", the position is taken that providing a fully surrounding case structure would be well within the level and skill generally available to one having ordinary skill in the art and the use of said common knowledge case structure would yield the predictable results of housing the coils

15. Claims 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of SHINOHARA, and further in view of BILLERBECK. Recitation of ABE and SHINOHARA are repeated here from above. While ABE discloses the claimed braking assembly as claimed including a casing, ABE does not disclose the casing having contours for dissipating heat. BILLERBECK teaches that it is known to provide a coil casing with contoured U-shaped channels for dissipating coil heat (see entire document, for instance, the abstract, Figures and relative associated text).

All of the component parts are known in ABE and BILLERBECK. The only difference is the combination of "old elements" into a single device.

Thus, it would have been obvious to one having ordinary skill in the art to provide the coil case of ABE with heat dissipating channels of the coil case of BILLERBECK, since the operation of the heat dissipating channels is in no way dependent on the operation of the braking assembly, and heat dissipating channels could be used in combination with an electromagnetic coil casing to achieve the predictable results of dissipating heat from coils inside a casing.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

17. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (571)272-1305. The examiner can normally be reached on M-F 8:00-4:30.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph L. Perrin/
Joseph L. Perrin, Ph.D.
Primary Examiner
Art Unit 1792

JLP